Application/Control Number: 09/922,363

Art Unit: 2877

Attorney Docket No.: CM 080201

SUMMARY OF INTERVIEW

On Friday April 08, 2005, Applicant Christopher Manning, Examiner Mr. Patrick Connolly and Supervisor Mr. Gregory Toatley Jr. conducted an interview by telephone beginning at approximately 3:30 PM Eastern time and concluding at approximately 4:15 PM.

Applicant suggested narrowing the scope of Claim 1 by changing "tunable solid-state laser" to "vertical cavity surface emitting laser" and adding language referencing modulation or current control. Mr. Patrick Connolly and Mr. Gregory Toatley Jr. tentatively approved this amendment, pending review of a written version.

Applicant called attention to Claims 12 through 15 and explained how the teaching of the pending application differs from Keens. Applicant should have included a discussion of Claims 5, 6 and 11 as well and they are included here for completeness, with the notation that they were not discussed in the interview. Mr. Patrick Connolly and Mr. Greg Toatley tentatively agreed with applicant's interpretation of Claims 12 through 15, pending review of the written summary and of any

other relevant prior art.

With respect to Claim 12, Keens teaches the measurement of a detector transfer function by the use of a primary beam of radiation in the spectrometer. Keens's method relies on scanning the interferometer mirror in two directions to generate signals. The resulting optical signals are transducted by a detector to electronic signals, which are processed to extract phase values; the resulting phases are subtracted to obtain a detector phase delay. Keens teaches that the phase delay can be converted to the complete transfer function, by methods described. Keens does not rely on, nor teach, an additional source of radiation for probing the detector transfer functions. This is a crucial difference from the Applicant's teaching and claims.

With respect to Applicant's Claim 13, Keens's method of obtaining the detector transfer function does not depend on the use of an adaptive filter. No mention of adaptive filters is made anywhere in Keens disclosure. Keens does teach a method of inverting the transfer function to produce a compensation filter, but the inversion is performed via an approach that does

not use nor require an adaptive filter. Applicant believes that the use of an adaptive filter for inversion of a detector transfer function in a Fourier transform spectrometer is completely novel.

With respect to Applicant's Claim 14, the subtraction of phase that occurs in Keens's method is not an optical subtraction, nor is it a subtraction of optical signals, *per se*. The signals used in Keens's method are obtained from forward and reverse scans. The optical signals are transducted by detectors to electrical signals, which are then digitized. After Fourier transformation of the digital representations, the phases of the signals are subtracted. Applicant's teaching is different in that the optical subtraction occurs at the detector element itself, before transduction to an electrical signal and also before conversion to a digitized signal.

With respect to Applicant's Claim 15, Keens, and many others, teach a variety of methods for correction of detector nonlinearity. Typically these methods rely on predetermination of detector response curves combined with estimation of where in the detector response the signal is at each point in time. To

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Applicant's knowledge, the use of an additional radiation source as a real-time optical probe for obtaining information about detector nonlinearity is completely novel.

(not discussed during interview) With respect to Claims 5, 6 and Claim 11, Applicant proposes alterations to be consistent with the current amendment to Claim 1. Thus, Claim 5 is withdrawn. Claims 6 and 11 are modified by changing "solid state" to "vertical cavity surface emitting."

1. **CONCLUSION**

In view of the above remarks, the Applicant respectfully requests reconsideration of the claims as amended and allowance of same.

April 11, 2005

Respectfully submitted,

Christopher J. Manning

Christopher J. Manning

Inventor/Applicant